Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (currently amended): A nitride based light emitting diode (LED) comprising:

a substrate;

a first conductivity type contact layer formed over the substrate, the first conductivity type contact layer being made of $Al_{x1}In_{y1}Ga_{1-(x1+y1)}N$ ($0 \leqq x1 \leqq 1$; $0 \leqq y1 \leqq 1$; and $0 \leqq x1+y1 \leqq 1$);

a light emitting layer formed over the first conductivity type nitride based contact layer;

a second conductivity type contact layer formed over the light emitting layer, the second conductivity type contact layer being made of $Al_{x2}In_{y2}Ga_{1-(x2+y2)}N$ ($0 \leqq x2 \leqq 1$; $0 \leqq y2 \leqq 1$; and $0 \leqq x2+y2 \leqq 1$);

~~a light emitting stacked structure formed over the substrate;~~

a nitride based dual dopant contact layer formed over the second conductivity type contact layer ~~light emitting stacked structure~~, the nitride based dual dopant contact layer comprising at least a p-type impurity ~~dopant~~ and an [[a]] n-type impurity wherein ~~dopant, and a material of the p-type dopant being different from a material of the n-type dopant~~ a concentration of the n-type impurity being higher than a concentration of the p-type impurity; and

a transparent conductive oxide layer formed over the nitride based dual dopant contact layer.

2 (previously presented): The LED of claim 1, wherein the nitride based dual dopant contact layer is made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$), the transparent conductive oxide layer is made of indium-tin oxide (ITO), cadmium-tin oxide, antimony-tin oxide (ATO), zinc oxide (ZnO), or zinc-tin oxide.

3 (currently amended): The LED of claim 1, wherein the nitride based dual dopant contact layer is formed by adding the p-type ~~dopants~~ impurity and the n-type ~~dopants~~ impurity together through an epitaxy growth.

4 (previously presented): The LED of claim 1, wherein the nitride based dual dopant contact layer is formed by: providing a second conductive type contact layer on the light emitting stacked structure; then providing a first conductive type contact layer on the second conductive type contact layer; and then cooling the LED through a cooling rate less than 40℃/min.

5-6 (cancelled).

7 (currently amended): The LED of ~~claim 5~~ claim 1, wherein the ~~multiple quantum well~~ light emitting layer has r InGaN quantum wells and (r+1) InGaN barriers, each InGaN quantum well is sandwiched in between two InGaN barriers, each InGaN quantum well is fabricated by $In_eGa_{1-e}N$, and each InGaN barrier is made of $In_fGa_{1-f}N$, $r \geqq 1$, and $0 \leqq f < e \leqq 1$.

8 (currently amended): The LED of ~~claim 5~~ claim 1 further comprising a first conductivity type cladding layer interposed between the first conductivity type contact layer and the ~~multiple quantum well~~ light emitting layer, and the first conductivity type cladding layer is made of $Al_xGa_{1-x}N$, and $0 \leqq x \leqq 1$.

9 (currently amended): The LED of ~~claim 5~~ claim 1 further comprising a second conductivity type cladding layer interposed between the second conductivity type contact layer and the ~~multiple quantum well~~ light emitting layer, and the second conductivity type cladding layer is made of $Al_zGa_{1-z}N$, and $0 \leqq z \leqq 1$.

10-18 (cancelled).

19 (currently amended): The LED of claim 1 wherein the nitride based dual dopant

contact layer is made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$); the n-type ~~dopants are~~ impurity is selected from the group consisting ~~made~~ of Si, Ge, Sn, Te, O, S, ~~or~~ and C; and the p-type ~~dopants are~~ impurity is selected from the group consisting ~~made~~ of Mg, Zn, Be, ~~or~~ and Ca.

20 (currently amended): A nitride based light emitting diode (LED) comprising:

a substrate;

a light emitting stacked structure formed over the substrate;

~~a nitride based dual dopant contact layer formed over the light emitting stacked structure, the nitride based dual dopant contact layer being made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$) and comprising at least a p-type dopant and an n-type dopant, a material of the p-type dopant being different from a material of the n-type dopant~~

a nitride based dual dopant contact layer formed over the light emitting stacked structure, the nitride based dual dopant contact layer comprising a p-type impurity and an n-type impurity, wherein the dual dopant contact layer is essentially not p-type; and

a transparent conductive oxide layer formed over the nitride based dual dopant contact layer.

21 (cancelled).

22 (new): The LED of claim 20, wherein the nitride based dual dopant contact layer is made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$), the transparent conductive oxide layer is made of indium-tin oxide (ITO), cadmium-tin oxide, antimony-tin oxide (ATO), zinc oxide (ZnO), or zinc-tin oxide.

23 (new): The LED of claim 20, wherein the nitride based dual dopant contact layer is formed by adding the p-type impurity and the n-type impurity together through an epitaxy growth.

24 (new): The LED of claim 20, wherein the light emitting stacked structure comprises a multiple quantum well, the multiple quantum well has r InGaN quantum wells and (r+1) InGaN barriers, each InGaN quantum well is sandwiched in between two InGaN barriers, each InGaN quantum well is fabricated by $In_eGa_{1-e}N$, and each InGaN barrier is made of $In_fGa_{1-f}N$, $r \geqq 1$, and $0 \leqq f < e \leqq 1$.

25 (new): The LED of claim 24 further comprising a first conductivity type cladding layer interposed between the first conductivity type contact layer and the multiple quantum well light emitting layer and the first conductivity type cladding layer is made of $Al_xGa_{1-x}N$, and $0 \leqq x \leqq 1$.

26 (new): The LED of claim 24 further comprising a second conductivity type cladding layer interposed between the second conductivity type contact layer and the multiple quantum well light emitting layer and the second conductivity type cladding layer is made of $Al_zGa_{1-z}N$, and $0 \leqq z \leqq 1$.

27 (new): The LED of claim 20 wherein the nitride based dual dopant contact layer is made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$); the n-type impurity are made of Si, Ge, Sn, Te, O, S, or C; and the p-type impurity are made of Mg, Zn, Be, or Ca.

28 (new): The LED of claim 20 wherein the dual dopant contact layer has a thickness less than 60 angstroms.

29 (new) The LED of claim 1 wherein the dual dopant contact layer has a thickness less than 60 angstroms.

30 (new): A nitride based light emitting diode (LED) comprising:

a substrate;

a light emitting stacked structure formed over the substrate;

a nitride based dual dopant contact layer formed over the light emitting stacked structure, the nitride based dual dopant contact layer comprising a p-type impurity and an n-type impurity wherein the dual dopant contact layer is essentially not a highly conductive layer; and

a transparent conductive oxide layer formed over the nitride based dual dopant contact layer.

31 (new): The LED of claim 30, wherein the nitride based dual dopant contact layer is made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$), the transparent conductive oxide layer is made of indium-tin oxide (ITO), cadmium-tin oxide, antimony-tin oxide (ATO), zinc oxide (ZnO), or zinc-tin oxide.

32 (new): The LED of claim 30, wherein the nitride based dual dopant contact layer is formed by adding the p-type impurity and the n-type dopants together through an epitaxy growth.

33 (new): The LED of claim 30, wherein the light emitting stacked structure comprising a multiple quantum well, the multiple quantum well has r InGaN quantum wells and (r+1) InGaN barriers, each InGaN quantum well is sandwiched in between two InGaN barriers, each InGaN quantum well is fabricated by $In_eGa_{1-e}N$, and each InGaN barrier is made of $In_fGa_{1-f}N$, $r \geqq 1$, and $0 \leqq f < e \leqq 1$.

34 (new): The LED of claim 33 further comprising a first conductivity type cladding layer interposed between the first conductivity type contact layer and the multiple quantum well light emitting layer and the first conductivity type cladding layer is made of $Al_xGa_{1-x}N$, and $0 \leqq x \leqq 1$.

35 (new): The LED of claim 33 further comprising a second conductivity type cladding layer interposed between the second conductivity type contact layer and the multiple quantum well light emitting layer and the second conductivity

type cladding layer is made of $Al_zGa_{1-z}N$, and $0 \leqq z \leqq 1$.

36 (new): The LED of claim 30 wherein the nitride based dual dopant contact layer is made of $Al_aIn_bGa_{1-(a+b)}N$ ($0 \leqq a \leqq 1$; $0 \leqq b \leqq 1$; and $0 \leqq a+b \leqq 1$); the n-type impurity are made of Si, Ge, Sn, Te, O, S, or C; and the p-type impurity are made of Mg, Zn, Be, or Ca.

37 (new): The LED of claim 30 wherein the dual dopant contact layer has a thickness less than 60 angstroms.

38 (new): The LED of claim 30 wherein the dual dopant contact layer has a p-type carrier concentration lower than $5x10^{18}$ cm^{-3}.